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Public Health Reports

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STATE–LOCAL GRANT-IN-AID FORMULAS

By Dr. A. L. Chapman, *Assistant Chief, States Relations Division,* and Clifford Greve, *Statistician, States Relations Division, Public Health Service*

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The shift from a relatively simple, local, agrarian economy to a broad, complex industrial one has accentuated the need for additional financial assistance to local governments. This change in the general economy has altered the basic tax structure of the United States in such a way as to make it relatively difficult for local governments to obtain sufficient local revenue to maintain adequate governmental activities to protect and serve the individuals of the community. The development of local health departments indicates that financial support from other than local tax funds has characterized the public health movement from early in its history. Lack of local revenues is the prime reason that the majority of local health departments now depend, in some degree, upon funds from other sources for the operation of some part of their program.

Protection of all communities from becoming foci in the spread of disease requires that the additional necessary revenues be supplied to communities with inadequate resources through some form of outside financial assistance such as grants-in-aid. Local tax bases may be such that the appropriation of as much as five dollars per capita to support a local health department might not work too great a hardship on local tax resources in some communities, while in other areas, a per capita local levy of 50 cents for this purpose would constitute an extremely heavy fiscal burden. The primary source of financial assistance to the communities lacking local fiscal resources is obviously from revenues collected from tax sources that are not taxable by local governments.

In addition to financial need, there are two other considerations that loom important as reasons for making grants to local health departments. The first is that financial assistance from higher governmental levels stimulates local groups to develop health programs and expand existing ones on a sound basis (*1*). Secondly, such participation of State governments in a program of financial assistance to the local

health departments encourages the provision of a more uniformly high standard of service.

The most important, as well as the most difficult problem in connection with the sharing of Federal and State revenues with units of local government is the method of distribution (*1*). A recent survey of State-local allocation formulas shows that only ten States have developed formulas, most of which are not truly objective (*2*). In many instances such funds are distributed on the basis of administrative decisions made at the State level after a subjective evaluation of local public health needs. Apportioning funds in this patternless manner often favors some local units at the expense of others and may result in the development of an unscientific "first come—first served" type of distribution (*3*). Today, however, the demand for full-time local health services creates the need for a scientific and equitable allocation formula to be applied to grants-in-aid. Objective methods of distribution assure State legislators, State administrators, and local health officers that the apportionment of State and Federal funds to communities of the State is free from bias or personal influence.

Sensing this impending need for objective methods of distributing grants-in-aid, North Carolina, Michigan, California, Washington, Illinois, Florida, Tennessee, Georgia, New York, and Louisiana pioneered in the development of State-local allocation formulas in the field of public health. Review of these State formulas indicates a wide variation in their basic patterns of distributing grants-in-aid to local health departments. Several of the States use numerous factors, each separately weighted in the formula, while other States base the distribution on single factors which only partially measure the service requirements of each community, the local community's financial ability to finance its health program, and the need for financial assistance from State or Federal tax resources.

It is doubtful if a single method of allocation is desirable, or could be devised, which would be applicable to the problems of all States. The experience of these 10 States and the several Federal agencies which have administered grant-in-aid programs indicates the impracticability of uniformity in the details of allocation. There are, however, certain broad principles that administrative agencies have found generally applicable to methods of distributing grants-in-aid on the Federal-State or State-local level.

The consideration of these basic principles in the formulation of allocation methods aids materially in keeping the plan of distribution simple and yet objective. The grant to each local health department should be related to the volume of services to be rendered, the community's financial resources to pay for these services, and the need of the local area for financial assistance (*4*). To achieve this end, each

local health department should submit an annual plan of action to the State health department prior to the allotment of State and Federal funds (*5*). Moreover, methods of allocation should permit long range planning and encourage increasing local financial participation (*6*). The differences in the number of services to be rendered and the financial ability of local areas create the need for a variable allocation formula which will distribute grants-in-aid in such a way as to equalize the financial burden among grantees (*7*). Doctor Kahl, the Director of Local Health Services for the State of Washington, indicates that allocation plans should be applicable only to full-time local health units when he says, "If the plan is applied only to full-time health departments, as it should be, it will stimulate their development, and will further assist in developing them in accordance with the State over-all plan for complete coverage by full-time health services" (*6*). The formula should be such that local health units which serve as training areas receive adequate compensation for training programs in addition to the regular allotment they receive by formula. This is necessary since personnel used in training devote part of their time to teaching.

There are two important administrative requirements that enter into the successful administration of a grant-in-aid program. Records and reports from local health departments are necessary to the grantor since they serve as a gross quantitative measure of operations and a means of evaluating their efficiency (*7*). Also, to insure a high quality of personnel, the grantor should require that personnel whose salary is paid in whole or in part from grants-in-aid should be selected through some type of merit system.

Simplicity is perhaps the most important general principle which should govern the development of an allocation plan. Measures of service requirements, fiscal ability, and the need for financial assistance should be the simplest that are available. Complex mathematical techniques should be avoided, insofar as possible. Administrative adjustments should be omitted or, at least, kept at a minimum since their use defeats the fundamental purpose of a formula.

What are some of the factors that may be used in measuring the number of health services needed, the fiscal ability of local communities to finance the necessary health activities, and the need for financial assistance from the State or Federal government?

Population is perhaps the most valid measure of the services required of a local health department (*9*). The number of people living in an area largely determines the size of the staff; number of clinics; and number of services, such as nursing visits, sanitary inspections, laboratory examinations, immunizations, and maternal and child health services that are necessary in the community. Population is a very broad measure of health needs, but a valid one, nevertheless.

Density of population, or the accessibility of health departments to the people, is a factor to be considered in allocation formulas. Sparsely populated areas, areas of small populations that cannot combine with other counties, and inaccessible terrain contribute to higher administrative operational costs. The use of a measurement of these factors in an apportionment formula usually results in a lump-sum grant to certain local areas, modified perhaps in relation to a measure of the need for financial assistance. Somewhat the same goal may be achieved more simply by making an equal minimum grant to each local health department as a part of a variable formula.

Measurements of need for financial assistance and the fiscal capacity of local governments present two of the most troublesome problems connected with the distribution of grants-in-aid (*10*). Per capita income accruing to residents of an area, while not normally taxable by local government, does reflect the local economic level and may be used as a measure of local fiscal capacity to finance local governmental functions. Since local taxation is essentially based upon real estate evaluation, measures of fiscal capacity of local governments may be calculated from assessed valuations, tax yield of a uniform tax rate, etc., providing there is an annual equalization of assessments within the State (*11*). Also, the need of the local governments for financial assistance from other than local tax revenues may be measured by the inverse function of these same factors.

The factors used in allocation formulas should be applicable to objective measurement and should be based upon dependable data, collected, insofar as possible, by official agencies. Factors should be assigned weights and used mathematically to grant proportionately greater assistance to localities having insufficient local financial resources or more than average service requirements, and proportionately less to areas of superior fiscal capacity or less than average need for service.

The Public Health Service stands ready, on a consultant basis and insofar as personnel are available, to assist individual States in making an approach to this problem of allocating grants-in-aid to local health units through use of a formula.

SUMMARY

Although State health officers have shown a commendable awareness of the need for developing a formula for the allocation of State and Federal funds as grants-in-aid to local health units, they have approached this problem with a conservatism that was warranted by the complexity of the local factors involved. Patterns are now being evolved whereby there may be developed simple, but adequate, grant-in-aid formulas which will be sufficiently flexible to be used in almost any State.

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CHANGES IN AGE SELECTION OF FATAL POLIOMYELITIS [1] [2]

By Alexander G. Gilliam, *Senior Surgeon, Public Health Service*

INTRODUCTION

In 1930, Forsbeck and Luther, (*1*) in a statistical study of the cases of poliomyelitis reported in Massachusetts from 1912 through 1929, called attention to a relative shift in age selection of the disease in the period following 1918. During this interval the percentage of cases reported in children under 5 years of age markedly decreased while there was compensatory increase in the percentage of cases in the age group 5–14. In the 15–19 age class, and in adult life, the percentage of cases remained constant. Though Forsbeck and Luther made no specific mention of the fact, it is presumed that the bulk of their reported cases were paralytic, certainly those prior to about 1927 (*2*).

The following year Limper, Thelander, and Shaw (*3*), in a clinical study of poliomyelitis in adults affected in the California 1930 outbreak, noted a higher percentage of cases reported among urban residents 15 years of age and older than was observed in the 1927 outbreak. However, there was no change in the percentage of cases in this age

[1] From the Department of Epidemiology, School of Public Health, University of Michigan.
[2] Aided by a grant from the National Foundation for Infantile Paralysis, Inc.

group among cases from rural areas. No mention is made as to whether or not the two epidemics differed in proportion of paralytic cases reported, but of the 60 adults studied clinically in 1930, 18 percent were nonparalytic.

In 1932, Knowlton (*4*) noted, in the Connecticut epidemic of 1931 as compared with the period 1921–30, an increased percentage of cases in persons over 5 years of age. The relative increase, however, was in the 5–14 age group and the percentage of cases in those 15 years of age and older was slightly less in 1931. In Knowlton's opinion a much greater number of nonparalytic cases was reported in 1931 than previously recorded.

Das (*5*) noted a similar phenomenon with respect to deaths attributed to poliomyelitis in the Death Registration States of 1910 in the period 1910–28. His published figures deal with the percentages of total deaths in the group under 5 years of age and show a decided decrease in these percentages during the 19-year period.

In recent years data such as those mentioned, as well as other studies (*6–13*) have been interpreted by some to "point to a general increase in the tendency of poliomyelitis to attack the higher age groups" (*14*). As implied in this statement, it appears to be generally believed in this country that there has been a progressively increased incidence of poliomyelitis in the older ages. It is clear, from the work mentioned, that a *relative* shift in age selection of *reported* cases and deaths has occurred, but it does not necessarily follow that there has been any actual tendency towards increase in attack rates or death rates in the older ages.

Any effort to distinguish between a relative and an absolute shift in age selection of poliomyelitis in the United States over any period of years after the late 1920's is limited because of changes in criteria of diagnosis of reported cases which have been in progress in this country since about 1927 and greatly accelerated since the early 1930's. Since there is some evidence that there may be a different age distribution of paralytic and nonparalytic cases in this country (*15, 16*), it would appear important that cases compared in different years be of the same general type. Thus, the value of the comparison made between the percentage age distribution of cases in New York City in 1916 with that in 1931 is limited, since virtually 100 percent of the cases reported in 1916 were paralytic while only 43 percent of those in 1931 were paralytic (*17*). In more recent years the proportion of paralytic cases reported in the United States has varied considerably from time to time and from place to place (*18*).

On the other hand there appears to be little reason to believe that there has been, since about 1916, a very marked change in criteria of diagnosis in reported fatal cases of poliomyelitis. Therefore, an

attempt is here made to distinguish between relative and absolute shifts in age selection of reported fatal poliomyelitis. It is recognized that changes noted in fatal poliomyelitis are not necessarily applicable to the nonfatal disease.

SOURCE OF DATA

The deaths attributed to poliomyelitis in the 20 Death Registration States [3] of 1910 for the years 1910 through 1940 have been analyzed. Since Das' study (*5*), 12 more years of experience are available as well as two censuses of population. Thus, it is now possible to compute age specific death rates and not deal with percentages of deaths as Das was forced to do.

The 20 Death Registration States of 1910 were selected for the same reasons that probably motivated Das. First, although there undoubtedly has been some change, between 1910 and 1940, in criteria of diagnosis of fatal poliomyelitis, such change is likely to be small in comparison with changes in criteria of diagnosis of reported cases. Second, the Death Registration States of 1910 comprised, in 1940, 53 percent of the population of the United States. In addition, from 1933 to 1940, 45 percent of the deaths from poliomyelitis were recorded from these 20 States.[4] Third, since deaths recorded from the same States have been used throughout the period 1910–40, the influence of latitude, shown by Doull (*19*) to affect the age selection of poliomyelitis, has been kept constant.

One factor influencing the age selection of poliomyelitis is not kept constant in these data. Since Frost's observation in 1913 (*20*), a number of other studies have demonstrated the tendency for paralytic poliomyelitis to select older ages in rural populations. In the period comprising this study there has been in the entire United States a tendency toward urbanization of population which of itself might affect age selection. Thus, in 1910, 53.6 percent of the population of the United States was classified as rural, and in 1940, 43.5 percent.

The urban and rural populations for the 20 States comprising this study are given in table 1. It is noted that in these States there is a similar tendency toward urbanization though it is not nearly so marked as for the entire United States. Thus, in these States 36.9 percent of the inhabitants were classified as rural in 1910 and 30.8 percent in 1940.

In recent years some workers have noted that differences in age incidence of poliomyelitis between rural and urban populations have

[3] The States included are California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Utah, Vermont, Washington, and Wisconsin.

[4] Between 1929 and 1940, when reports of poliomyelitis deaths for the entire United States are available either from Bureau of the Census reports, or from The Notifiable Diseases, 51 percent was reported from these 20 States.

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TABLE 1.—*Enumerated population at censuses of 1910 and 1940 for 20 Death Registration States of 1910*

	1910		1940	
	Number	Percent	Number	Percent
All ages:				
Urban [1]	29,614,009	63.1	48,605,261	69.2
Rural	17,305,615	36.9	21,590,801	30.8
Total	46,919,624	100.0	70,196,062	100.0
Under 5 years of age:				
Urban [1]	2,937,551	60.7	3,170,598	63.4
Rural	1,903,689	39.3	1,827,404	36.6
Total	4,841,240	100.0	4,998,002	100.0

[1] Incorporated places of 2,500 inhabitants or more are classified as urban.

often disappeared (*14*) though no mention is made as to whether the cases compared are paralytic. Whether or not this is generally true in this country today awaits documentation based upon comparisons of a number of series of cases where similar diagnostic criteria have been applied to the paired series. In Sweden (*21*), at least, the age selection of poliomyelitis is still different in urban and rural populations in the same fashion as formerly noted in this country.

TABLE 2.—*Age specific poliomyelitis death rates per 100,000 population, in the 20 Death Registration States of 1910, for the years 1910–40, inclusive*

[Death rate per 100,000 population]

Year	Age groups				Crude rate, all ages	All ages, adjusted rate [1]
	0–4	5–9	10–19	20 and over		
1910	16.7	5.0	2.0	0.4	2.8	2.8
1911	11.2	2.7	1.1	.3	1.8	1.8
1912	12.3	3.0	1.1	.3	2.0	1.9
1913	7.3	2.6	.9	.3	1.4	1.4
1914	5.5	1.7	.8	.3	1.1	1.1
1915	5.5	1.3	.9	.3	1.0	1.0
1916	86.2	23.6	5.8	1.1	12.9	12.9
1917	7.6	2.2	1.0	.2	1.3	1.3
1918	5.4	2.0	1.0	.3	1.1	1.1
1919	3.7	1.4	.7	.2	.8	.8
1920	4.4	1.8	.8	.2	.9	.9
1921	7.5	5.4	2.6	.4	2.0	2.0
1922	4.2	1.6	.9	.2	.9	.9
1923	4.3	1.4	.9	.2	.8	.9
1924	5.1	2.9	1.8	.3	1.3	1.3
1925	5.6	3.8	2.4	.4	1.6	1.6
1926	3.3	1.4	1.1	.2	.8	.8
1927	7.3	5.4	2.7	.4	1.9	2.0
1928	4.8	3.7	2.1	.3	1.3	1.4
1929	2.7	1.4	.8	.2	.6	.7
1930	3.7	2.7	1.8	.3	1.1	1.2
1931	9.2	6.9	3.4	.5	2.4	2.5
1932	2.9	1.9	1.0	.1	.7	.7
1933	1.9	1.8	1.2	.2	.6	.7
1934	1.4	1.3	1.3	.2	.6	.6
1935	2.1	2.2	1.5	.3	.8	.9
1936	1.1	1.0	.6	.2	.4	.4
1937	2.1	2.2	1.7	.3	.8	.9
1938	.8	.5	.4	.1	.2	.3
1939	.7	1.5	1.2	.3	.5	.6
1940	1.2	1.8	1.2	.3	.6	.7

[1] Adjusted to age distribution of 1910 population, as standard.

RESULTS

In table 2 are given age specific death rates [5] for poliomyelitis per 100,000 estimated population, in the Death Registration States of 1910, and death rates for all ages adjusted to the age distribution of the

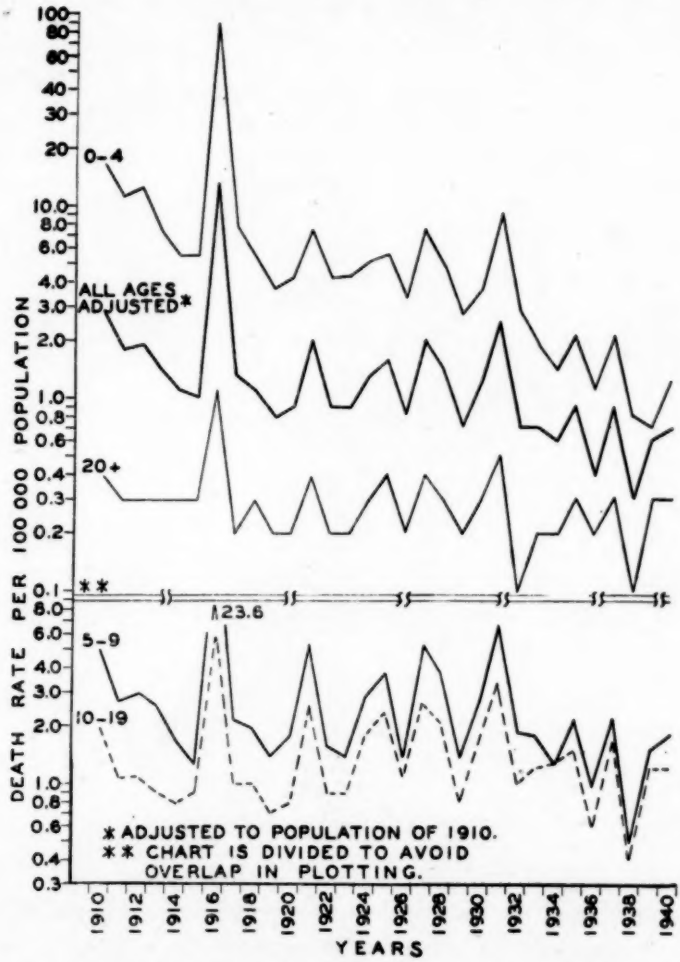

FIGURE 1.—Trend of mortality from poliomyelitis, 1910–40. Age specific death rates in 20 Death Registration States of 1910

[5] Rates were calculated from death reports and population estimates obtained as follows:
Deaths in the several age classes, recorded as due to acute poliomyelitis and polioencephalitis, were taken from the annual volumes of Mortality Statistics, 1910–33, U. S. Department of Commerce, Bureau of the Census. Figures for 1934, 1935, and 1936 were obtained from special tabulations kindly made available by the Bureau of the Census. Poliomyelitis deaths for the years 1937–40 were taken from Vital Statistics of the United States, Pt. I, Place of Occurrence, U. S. Department of Commerce, Bureau of the Census.

Populations in the several age groups as of July 1 each year were obtained by arithmetic interpolations of the 1910, 1920, 1930, and 1940 censuses. Rates were calculated separately for the under 1 year of age and the 1–4 year groups. Since the rates for the two classes were similar, and their trends almost identical, they were recalculated, as in table 2, for the 0–4 age group. Deaths in the 10–14 and 15–19 groups were not available separately for the entire period, and are therefore combined as 10–19.

population of 1910 as a standard. These data are shown graphically in figure 1. It is noted, that the trend of poliomyelitis, as measured by mortality rates, has been altered abruptly by epidemic excursions eight times between 1910 and 1940. The general trend of mortality, however, has been downward during this period,[6] though from about 1920 to 1932 the trend in total rates remained somewhat stationary except for the four epidemic periods noted.

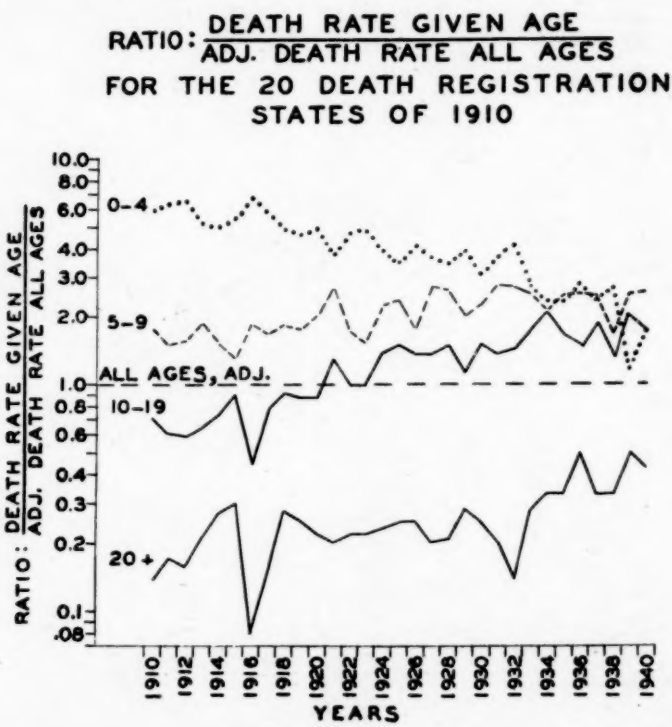

FIGURE 2.—Relative shift in age selection of fatal poliomyelitis, 1910–40

For children under 5 years of age the decline in mortality is striking and regular, except for the epidemic interruptions. For those persons 20 years of age and over, whatever evidence of trend as may be apparent is also in the direction of a decline in mortality. In the age groups 5–9 and 10–19, however, while the trend for the whole 31-year period is somewhat in the direction of a decline in mortality rates, the period 1920 to 1932 is marked by a tendency toward increase in mortality rates and after that there is a sharp decline.

Thus, for the whole period under study in the Death Registration States of 1910, the absolute trend of poliomyelitis mortality has been generally downward, with the reduction in rates most marked in per-

[6] Provisional crude death rates for these States for all ages, 1941–46, are as follows: 1941, 0.5; 1942, 0.3; 1943, 0.7; 1944, 1.2; 1945, 0.8; and 1946, 1.2.

sons under 5 years of age and least noticeable in those 20 years of age and over.

In figure 2 are shown the trends of the ratios between age specifis death rates and adjusted total death rates, for consecutive yearc 1910–40, inclusive. These ratios portray not absolute trends but relative shifts each year between the several age groups. In effect they measure the same phenomenon as Das' percentage distributions of deaths except that ratios of rates are, in computation, adjusted for yearly changes in age distribution of population. It is apparent from figure 2 that there has been a relative decrease in deaths in persons under 5 and a compensatory increase in the other age groups. The relative increase throughout the whole period is perhaps most marked in persons 10–19 years of age, and least noticeable in those 5–9.

DISCUSSION

It is clear from these data that in the 20 Death Registration States of 1910, there has occurred between 1910 and 1940 a relative shift in age selection of deaths attributed to poliomyelitis. It is equally clear that there has been no absolute increase in mortality in any of the age groups considered. On the contrary, throughout the whole period there has been a general tendency toward decrease in mortality with, however, the decline hardly noticeable in those of 20 years of age and over.

Since the evidence thus far available for shift in age selection of reported cases has only demonstrated a similar relative shift, one is tempted to argue that no absolute shift in age selection of cases has occurred. This, however, does not necessarily follow. One cannot escape the impression that the ratio of infection to paralytic disease varies in different epidemics; and there is definitive evidence that the case fatality rate for all ages varies considerably under different situations even when based on paralytic cases only. In addition, case fatality rates may from time to time vary in different age classes. A variation such as this, for example, might explain the peculiar and pronounced relative shift in mortality noted in these data in 1916 and to some extent in 1932 (fig. 2).

In any event, real changes in case fatality conceivably could accompany real changes in age selection of cases, and produce the absolute changes in mortality rates observed in this experience. Therefore, though no evidence for an increased mortality in the higher age groups is here adduced, it does not necessarily follow that such a tendency has not occurred with regard to cases. Up to the present, however, only a relative increase in reported cases among older persons has been clearly demonstrated, and this is exactly what these data demonstrate for mortality.

CONCLUSIONS

1. For 20 Death Registration States of 1910 comprising about one-half the population of the United States, there has been a general downward trend, interrupted by eight epidemic excursions, in mortality attributed to poliomyelitis in the period 1910–40.

2. During this period there has been a relative increase in mortality among those 5 years of age and older.

3. This relative increase is not due to increased mortality rates in the older ages but, instead, to a more pronounced decline in mortality in those under 5 years of age.

4. The changes noted with regard to fatal poliomyelitis are not necessarily applicable to the nonfatal disease.

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STUDIES OF THE ACUTE DIARRHEAL DISEASES

XIX. Immunization in Shigellosis [1] [2]

By ALBERT V. HARDY,[3] THELMA DECAPITO, *Assistant Bacteriologist, Public Health Service* and SEYMOUR P. HALBERT, *Assistant Surgeon (R), Public Health Service*

Immunization as a means of controlling communicable disease has been used in both military and civilian practice with increasing effectiveness. In regard to the value of *Shigella* vaccines, however, there are conflicting opinions (*1, 2, 3, 4, 5*) and there is no substantial evidence in the literature upon which to base a secure decision. Our investigation of this subject was begun July 1944. The evidence accumulated in the following 20 months strongly indicated that the present *Shigella* vaccines given parenterally are ineffective in the prevention of naturally occurring *Shigella* infections. Shaughnessy and his associates arrived at a similar conclusion through critical tests on human volunteers (*6*). Together, the two studies provide strong negative evidence. Our findings will be presented only with that detail necessary to prevent a repetition of unproductive exploration.

The mouse protection test was used extensively as the measure of antibody response (*7, 8*). Pooled serums before and after inoculation were compared. The animals were given varying amounts of serums followed within 24 hours by a constant dosage of challenge organisms. The 50 percent protective volumes were computed by the method of Reed and Muench (*9*), as of the fourth day following infection. The "fold-increase" in protective antibodies was calculated by comparing the amounts of serums required to protect 50 percent of the mice before and after immunization. Agglutination tests were used as a supplementary measure of immune response.

The selection of the organisms to be used for vaccine production was left in the hands of the cooperating workers who provided the vaccine: Drs. A. J. Weil, Lederle Laboratories; H. J. Shaughnessy and S. Levinson, Chicago, and Captain Charles Seastone of the Army Medical School. Organisms of the highest antigenicity in mice were used. In the latter part of our study the vaccines were made from the same strains which were used by Shaughnessy and associates in their experiments (*6*).

The methods of processing the vaccines varied. We studied comparatively those prepared by killing the organisms by heat, formalin, and ultraviolet irradiation. There were no wide differences in anti-

[1] From the Division of Infectious Diseases, National Institute of Health, with the cooperation of the Departments of Mental Hygiene of New York and Illinois and of the institutions in which the studies were conducted.

[2] The work reported in this paper was done under a transfer of funds recommended by the Committee on Medical Research, from the Office of Scientific Research and Development to the National Institute of Health.

[3] From the Bureau of Laboratories, Florida State Board of Health.

genicity, though the ultraviolet-killed preparation (*10*) was ordinarily the most potent and the formalin-killed the least.

The factor of dosage seemed of particular importance in a six-organism polyvalent vaccine. Early we sought to determine the maximum amount which would be satisfactorily tolerated as the immunizing dosage. We observed that *Shigella* vaccines tend to produce a wide erythematous reaction with relatively little edema or soreness. Adults would tolerate a dosage of up to 2.5 billion organisms of a monovalent or polyvalent vaccine containing Flexner, Sonne, and Schmitz strains. The addition of Shiga organisms or modified Shiga toxin (as was done in the Army vaccine) resulted in disturbingly severe reactions, even when the total content was reduced to one billion organisms. The response to equal numbers of organisms killed by irradiation, heat, or formalin was closely similar, though the ultraviolet preparation was tolerated a little better than the others. Children and infants often had severe reactions even when given a much reduced dosage. The amounts finally employed for adults was 6.25 billion organisms in three doses (1.25, 2.5, and 2.5, respectively) given at weekly intervals, for all vaccines except those containing the modified Shiga toxin. With the Army vaccine the total dosage (administered in three equal doses) was 1.5 billion organisms (Flexner and Sonne) and 0.024 mg. of Shiga antigen. Children and infants were given one-half to one-fourth of the adult doses, depending on age and weight.

The significance of booster inoculation and/or revaccination 6 to 8 months after the initial treatments was studied. There was no suggestion that the second inoculations have better responses than those which followed the first series.

The practical significance of adjuvants was examined. Using the technic of Freund and his group (*11*), we compared the response of rabbits to equal doses of vaccine given in saline, and in falba and mineral oil. In agreement with other investigators (*12*), the antibody titers remained high for prolonged periods with the adjuvants; without them the titers rapidly returned to low levels. However, our patients could tolerate only small doses of *Shigella* vaccine when given in oil emulsion. Three subcutaneous abscesses resulted from our initial small series of inoculations. We elected, therefore, to test the efficacy of large doses of vaccine given in saline.

These early observations served as a basis for our trials of these vaccines in groups with a high endemic incidence of *Shigella* infections. For these, we turned to institutions for the mentally ill or defective. We had the cooperation of the Departments of Mental Hygiene in both New York and Illinois. We selected five institutions in which *Shigella* infections had been a recurring problem over a period of years. The infection occurred during the period of study in two of the five institutions. In obtaining our test and con-

trol groups in these, the inmates of a ward or building were listed alphabetically. Alternate patients were used in one; in the other the alphabetic list was divided in thirds and those in the mid-third were retained as the controls.

The infection in the New York institution was due to Flexner Z. It spread to the four buildings where patients had been inoculated. Those concerned were low-grade mentally defective inmates 5 years of age and older. The adult dosage of Army vaccine as stated was given. A total of 6.25 billion organisms of the polyvalent irradiated vaccine was used. Monovalent Flexner Z vaccine was also tested, but in a total of only 3.75 billion organisms given in three equally divided doses. The infection had been introduced to one group just before the inoculations were started, and one group remained free of infection for 2 months following the injections. However, the spread of infection in all was at that time when protection should have been provided if immunization had practical value. The groups under observation were examined culturally at weekly intervals. Cases of diarrhea were reported by the attendants in charge, and these were cultured promptly. Inoculations were given in March and April; the groups were followed up to the end of July. The findings are summarized in table 1. There was no evidence that the vaccines had any significant beneficial effect. Even the severity of the clinical infections did not vary appreciably insofar as we could determine.

TABLE 1.—Shigella *infections discovered following the completion of inoculation with* Shigella *vaccines in a New York State institution for the mentally defective*

Group	Controls			Inoculated			
	Individuals	Positive clinical cases	Total known infected	Individuals	Positive clinical cases	Total known infected	Vaccine used
A	65	14	46	64	18	44	U. V.[1] polyvalent.
B	62	9	39	62	7	41	U. V.[1] monovalent.
C	69	9	45	69	5	46	Army.
D	69	16	44	68	15	41	Do.
Total	265	48	174	263	45	172	

[1] Killed by ultraviolet irradiation.

The studies in the Illinois institutions were continued through a period of 15 months. During this time four *Shigella* infections (Flexner V and W, Sonne and Schmitz) spread actively. Booster doses were used 6 months after the initial inoculations, and revaccination 2 months later. The findings without reference to the particular vaccine used are summarized in table 2. In all, 53 percent of the controls and 51 percent of those vaccinated became infected.

One uncontrolled group was also studied. *Shigella* infections were quite troublesome among the 123 inmates of the nursery. All of these were inoculated with the hope of obtaining a maximum effect within the group. Children injected in November 1944 were reinoc-

TABLE 2.—Shigella *infections discovered following inoculation with* Shigella *vaccines in an Illinois institution for the mentally defective*

Group	Controls							Inoculated						
	Individuals	Total known infected	Total known infections					Individuals	Total known infected	Total known infections				
			Fv [1]	Fw [2]	So [3]	Sch [4]	Total			Fv [1]	Fw [2]	So [3]	Sch [4]	Total
A	44	27	16	0	8	19	43	44	21	14	0	5	11	39
								43	16	7	0	4	8	19
B	44	23	11	5	5	8	29	43	19	11	8	5	6	30
								37	23	12	3	6	8	29
C	46	21	12	0	5	11	28	46	28	21	1	4	10	36
								46	26	15	0	9	13	37
Total	134	71	39	5	18	38	100	259	133	80	12	33	56	181

[1] *Shigella paradysenteriae* (Flexner V).
[2] *Shigella paradysenteriae* (Flexner W).
[3] *Shigella sonnei.*
[4] *Shigella schmitzii.*

ulated in May 1945. The recent admissions had the one series of injections only. During the summer, 64 (52 percent) of the 123 children became infected with *Shigella*, with a total of 87 known separate infections. Acute diarrhea was prevalent. Considering this high incidence of infection, in addition to the fact that several of the children were quite ill as a result of the inoculations, it was generally felt that *Shigella* vaccines, as now available, have no practical value in the prevention of disease, or infection, in such a group of young children.

The evidence in our opinion warrants the broader conclusion that present vaccines administered parenterally have no significant value in the control of clinical or subclinical *Shigella* infections.

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SICKNESS ABSENTEEISM AMONG INDUSTRIAL WORKERS, THIRD AND FOURTH QUARTERS OF 1947 [1]

TREND OF DISABLING MORBIDITY, 1938–47

By W. M. GAFAFER, *Principal Statistician, Public Health Service, Federal Security Agency*

Accompanying data on sickness absenteeism are derived from periodic reports of 8-day or longer disabilities submitted by a group of industrial sick benefit organizations representing approximately 200,000 male workers. Table 1 gives the average annual number of absences per 1,000 males by cause for various periods of 1947 together with comparable data for earlier years. Figure 1 presents for all causes and each of four broad cause groups a 4-quarter moving average of frequencies (annual basis) for the 40 quarters of the 10 years, 1938–47.

THIRD QUARTER, 1947

A comparison of third-quarter rates for 1947 and 1946 shown in table 1 reveals a number of lower rates in 1947, decreases of over 20 percent in frequency being recorded for neurasthenia, "other diseases of nervous system," the rheumatic group of diseases,[2] and each specific respiratory cause except pneumonia. Digestive diseases exhibit relatively stable rates in the two third-quarter periods, appendicitis constituting a notable exception with a frequency increase in 1947 of almost 40 percent.

FOURTH QUARTER, 1947

Generally lower frequencies continued in the fourth quarter of 1947, the rate for each specific digestive and nonrespiratory-nondigestive cause being less than the corresponding rate for 1946. With the exception of influenza and grippe, yielding a frequency increase in 1947 of 15 percent, respiratory disease rates in the two fourth-quarter periods show relatively little change.

DISABLING MORBIDITY TREND, 1938–47

Figure 1 permits an investigation of the trend of disabling morbidity over the 10 years, 1938–47, as revealed by a 4-quarter moving average of the annual number of absences per 1,000 males recorded for the 40 quarters of the 10-year period. Seasonal variation and minor fluctuations in the rates are eliminated by the smoothing properties of the moving average.

[1] From Industrial Hygiene Division, Bureau of State Services. Report for first and second quarters of 1947 appeared in PUBLIC HEALTH REPORTS, 62: 1773-1774 (December 19, 1947).

[2] Rheumatism, acute and chronic; neuralgia, neuritis, sciatica; and diseases of organs of movement except diseases of joints.

TABLE 1.—*Number of absences per 1,000 males (annual basis) on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by cause; experience of male employees in various industries, third and fourth quarters of 1947* [1]

Cause[2]	Number of absences per 1,000 males (annual basis) beginning in specified period									
	Third quarter		First 9 months			Fourth quarter		Year		
	1947	1946	1947	1946	1942–46	1947	1946	1947	1946	1942–46
Sickness and nonindustrial injuries	88.7	97.0	110.1	116.9	127.5	96.2	107.2	106.6	114.5	129.2
Nonindustrial injuries (169–195)	13.1	12.8	11.9	12.4	12.3	10.3	11.9	11.5	12.3	12.2
Sickness	75.6	84.2	98.2	104.5	115.2	85.9	95.3	95.1	102.2	117.0
Respiratory diseases	18.5	23.4	37.6	40.0	50.2	34.3	32.9	36.7	38.2	52.5
Tuberculosis of respiratory system (13)	.5	.7	.6	.7	.8	.5	.5	.6	.7	.7
Influenza, grippe (33)	4.4	5.9	16.1	16.0	19.5	11.2	9.7	14.8	14.4	21.3
Bronchitis, acute and chronic (106)	3.1	4.1	5.3	5.7	8.2	6.3	5.9	5.6	5.7	8.7
Pneumonia, all forms (107–109)	2.3	2.0	3.7	3.8	6.3	3.6	3.3	3.7	3.7	6.2
Diseases of pharynx and tonsils (115b, 115c)	2.9	3.7	3.9	4.5	5.9	3.7	4.1	3.8	4.4	5.6
Other respiratory diseases (104, 105, 110–114)	5.3	7.0	8.0	9.3	9.5	9.0	9.4	8.2	9.3	10.0
Digestive diseases	16.8	15.6	16.9	16.4	18.0	14.0	17.1	16.2	16.6	17.8
Diseases of stomach except cancer (117, 118)	4.7	5.0	5.1	4.9	5.9	4.8	5.4	5.1	5.0	5.9
Diarrhea and enteritis (120)	2.4	2.2	2.4	2.0	2.3	1.6	2.4	2.2	2.1	2.2
Appendicitis (121)	3.9	2.8	3.7	3.2	4.4	3.1	3.7	3.5	3.4	4.3
Hernia (122a)	2.4	2.3	2.3	2.9	2.2	1.6	2.2	2.1	2.7	2.2
Other digestive diseases (115a, 115d, 116, 122b–129)	3.4	3.3	3.4	3.4	3.2	2.9	3.4	3.3	3.4	3.2
Nonrespiratory-nondigestive diseases	36.9	41.4	39.8	44.4	42.7	34.3	42.4	38.4	43.9	42.3
Infectious and parasitic diseases (1–12, 14–24, 26–29, 31, 32, 34–44)[3]	2.9	2.4	2.7	3.2	2.9	1.6	2.8	2.5	3.1	2.7
Rheumatism, acute and chronic (58, 59)	3.2	4.3	3.7	4.9	5.3	3.7	4.2	3.7	4.7	5.1
Neurasthenia and the like (part of 84d)	1.5	2.2	1.8	2.1	1.9	1.2	2.1	1.6	2.1	1.9
Neuralgia, neuritis, sciatica (87b)	2.3	3.1	2.5	3.0	3.0	2.1	2.8	2.4	3.0	3.0
Other diseases of nervous system (80–85, 87, except part of 84d, and 87b)	1.6	2.3	1.6	2.1	1.8	1.4	1.7	1.5	2.0	1.8
Diseases of heart and arteries, and nephritis (90–99, 102, 130–132)	5.9	5.6	7.0	7.2	6.4	5.5	6.7	6.6	7.1	6.5
Other diseases of genitourinary system (133–138)	2.9	3.2	3.0	3.1	3.1	3.0	3.3	3.0	3.2	3.1
Diseases of skin (151–153)	3.8	4.2	3.4	3.7	3.4	3.7	3.8	3.5	3.7	3.4
Diseases of organs of movement except diseases of joints (156b)	2.5	3.3	3.0	3.4	3.5	2.7	3.5	2.9	3.4	3.5
All other diseases (45–57, 60–79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162)	10.3	10.8	11.1	11.7	11.4	9.4	11.5	10.7	11.6	11.3
Ill-defined and unknown causes (200)	3.4	3.8	3.9	3.7	4.3	3.3	2.9	3.8	3.5	4.4
Average number of males	194,970	198,432	193,991	197,258	1,191,874	195,660	193,748	194,408	196,381	1,184,088

[1] Industrial injuries and venereal diseases are not included.
[2] Numbers in parentheses are diseases title numbers from "International List of Causes of Death, 1939."
[3] Exclusive of influenza and grippe, respiratory tuberculosis, and venereal diseases.

For all causes and each broad cause group the initial plotted point represents the arithmetic mean of rates for the four quarters of 1938, the average being centered at July 1, the midpoint of the 4-quarter period. The second plotted point is the arithmetic mean of rates for the second, third, and fourth quarters of 1938, and the first quarter of 1939, and is centered at the midpoint of this period, October 1, 1938. The final plotted point represents the mean of rates for the four quarters of 1947, and is centered at July 1, 1947.

An unusually low or high rate recorded for a particular quarter when compared with the same quarter of the preceding or succeeding year, affects the four successive mean values to which that quarter contributes. Thus it will be observed in figure 1 that locally low averages yielded for respiratory diseases in the four successive periods centered at October 1, 1941, January 1, April 1, and July 1, 1942, reflect the nonepidemic character of the respiratory disease rate recorded for the first quarter of 1942 (57.6 absences per 1,000 males) when compared with the corresponding quarter of 1941 (79.7) and 1943 (97.7).

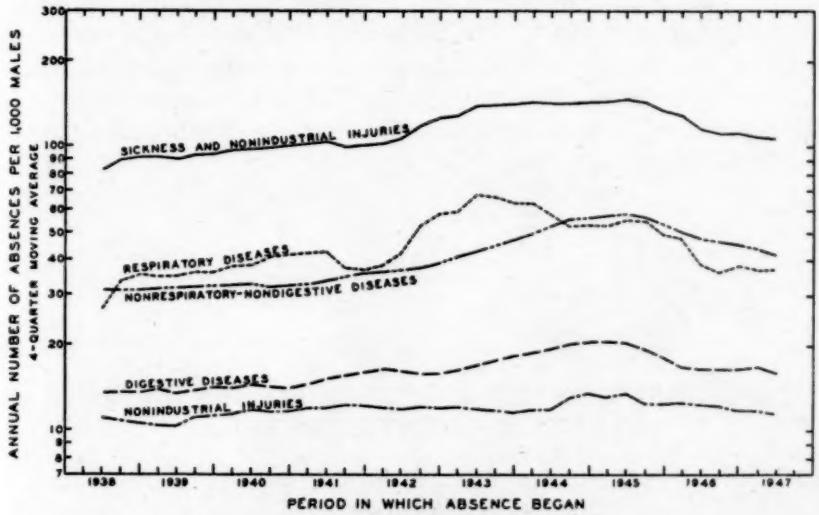

FIGURE 1.—*Annual number of absences per 1,000 males (4-quarter moving average) on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by broad cause group; experience of male employees in various industries, 1938–47, inclusive. (Logarithmic vertical scale.)* Note: *Each average rate is plotted against the mark on the horizontal axis which is the midpoint of the 4-quarter period giving rise to the average. Nonrespiratory-nondigestive diseases include ill-defined and unknown causes.*

Figure 1 reveals the following relationships:

1. Moving averages for all causes tend to increase during the period 1938–43, remaining at a relatively high level during 1943–45 (approximately 25 percent above the 40-quarter mean of 112.5 absences per 1,000 males), and decreasing during 1946 and 1947.

2. Average rates for digestive and nonrespiratory-nondigestive diseases tend to move in a parallel fashion, although at different levels, over the 10-year period. For each of the two cause groups the rates

are remarkably stable during 1938–40, revealing an increasing trend during 1941–45, and tending to decrease in 1946 amd 1947.

3. For the group of respiratory diseases, on the other hand, the average rates exhibit an increasing trend during 1938-43, a peak value being determined by the four quarters of 1943 (66.8 absences per 1,000 males) which is over 50 percent above the 40-quarter mean for respiratory diseases (43.9). Subsequent averages tend to decrease.

4. With the exception of the initial value, the average rates for respiratory diseases consistently exceed corresponding averages for nonrespiratory-nondigestive diseases during 1938–44; this relationship is reversed during 1944–47.

Observed excesses in disability frequency during the war period are particularly notable when it is recalled that the present experience is based on absences of 8 days or longer generally certified by a physician. In any interpretation of the data consideration must be given to the possible effects on recorded sick absenteeism of changes in composition of exposed populations with respect to age, physical fitness, and general work experience, as well as the possible influence of other factors such as night work and overtime.

THE DISTRIBUTION OF ENDEMIC TYPHUS IN RATS IN LAVACA COUNTY, TEXAS [1]

By J. V. Irons,[2] J. N. Murphy, Jr.[2] and David E. Davis, *S. A. Sanitarian (R), Public Health Service*

In connection with an investigation of typhus control procedures in Lavaca County, Texas, rats were trapped in nearly every area of the county for blood test by the complement-fixation technic.[3] The procedure utilized was a slight modification of that described by Brigham and Bengston (*1*). We were particularly interested in surveying rural areas in order to learn more regarding the distribution of murine typhus on the farms. Rats were caught in No. 0 steel traps and brought alive in sacks to the Hallettsville field laboratory where they were bled, examined for ectoparasites, measured, and sex determined. All data were recorded on punch cards.

[1] From the Communicable Disease Center, Public Health Service, Atlanta, Georgia and the Texas State Health Department, Austin, Texas.

[2] Staff members of Laboratories of the Texas State Health Department.

[3] The antigen utilized was a suspension of endemic typhus rickettsiae kindly supplied by Dr. H. R. Cox, Pearl River, New York.

The principal criterion employed in selection of trapping sites in this survey was that there be *recent evidence of abundance of rats.* An establishment was considered "negative" if no rat had a positive complement-fixation test and if at least three adult rats had negative tests. An establishment was considered "positive" if one or more rats had a positive test. The findings in this report are based on rats trapped from January through December 1945, with the exception that trapping was discontinued in Yoakum in April. *Rattus rattus* was found throughout the county, but *Rattus norvegicus* was found only in Yoakum. The characteristics of the rats have been described by Davis (*2*).

Blood samples from rats of all ages were obtained. The serum titers varied at least from 1–10 to 1–1280. Adult rats tended to give higher percentages of positive tests than young or subadult rats (table 1).

TABLE 1.—*Results of complement-fixation tests, by age groups and species of rats*

	Rattus rattus		Rattus norvegicus	
	Number of rats	Percentage positive	Number of rats	Percentage positive
Adults:				
Urban	307	71	22	77.3
Rural	367	47.7	0	----
Total	674	58.3	22	77.3
Young and subadults:				
Urban	165	43	14	57.1
Rural	161	37.8	0	----
Total	326	40.4	14	57.1
Grand total	1,000	52.5	36	69.4

It is evident (table 2) that rats showing positive tests were found on the majority of farms and semirural establishments which were sampled.

TABLE 2.—*Results of complement-fixation tests on* Rattus rattus

Urban				Rural			
Number of places sampled	Percentage positive	Number of rats tested	Percentage positive	Number of places sampled	Percentage positive	Number of rats tested	Percentage positive
70	94	472	61.2	203	77	528	44.7

That the great majority of farms had been or were foci of murine typhus was not too surprising, since many cases of typhus have been recognized in farm families of Lavaca County in recent years. Many farms were inadequately sampled so that the county-wide survey

was far from complete. These findings are somewhat similar to those from Coffee County, Alabama (*3*).

Unfortunately, this report permits no conclusions regarding when the rats in question acquired infection or whether the foci of infection were active or dormant. A subsequent report (*4*) on the distribution of infected fleas in Lavaca County may provide some information on this problem. It seems probable at any rate that a considerable number of the farms in Lavaca County should be included in typhus control activities.

SUMMARY

Based on results of complement-fixation tests for endemic typhus of rats in Lavaca County, Texas:

1. Ninety-four percent of 70 urban establishments sampled harbored rats with positive tests. Of 472 *Rattus rattus* from urban establishments, 61 percent gave positive tests, and of 36 *Rattus norvegicus*, 69 percent gave positive tests.

2. In rural or semirural areas 77 percent of 203 farms or semirural establishments harbored rats with positive tests, and 44 percent of 528 rats gave positive tests.

3. The widespread distribution of typhus in rats on farms suggests that such areas must be included in control activities.

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INCIDENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MAY 1, 1948

Summary

Of 56 cases of poliomyelitis reported for the week (last week 39), Texas reported 25 (last week 10), North Carolina 7, Iowa 5, and New Jersey, Florida, and California, 3 each. No other State reported more than 1 case. The 5-year (1943–47) median is 28, reported for the corresponding week last year. The largest corresponding number of the past 5 years was 47, reported for the week in 1946, and the least 18, in 1944. For the 6-week period since March 20, the approximate average date of seasonal low incidence, 214 cases have been reported, as compared with 170 for the same period last year, 184 in 1946, the highest in the past 6 years, and 92, the lowest, in 1942.

The incidence of measles increased from a total of 27,438 cases last week to 28,426 for the current week, as compared with a 5-year median of 26,526. The total since the first of the year is 306,597, as compared with a 5-year median of 314,834. The largest number reported for the corresponding periods of the past 5 years was 428,804, in 1944, and the smallest, 49,965, in 1945.

For the current week, Wyoming reported 2 cases of Rocky Mountain spotted fever, and Missouri, Kansas, and Mississippi 1 case each of smallpox.

Since the first of the year, cumulative figures slightly above the corresponding median expectancies have been reported for the dysenteries (amebic, bacilliary, and undefined, combined), infectious encephalitis (approximately the same as the median), tularemia, and undulant fever. For the current week figures above the medians are reported for the dysenteries, measles, poliomyelitis, and tularemia.

Deaths recorded during the week in 93 large cities of the United States totaled 9,041, as compared with 9,210 last week, 8,977 and 8,974, respectively, for the corresponding weeks of 1947 and 1946, and a 3-year (1945–47) median of 8,974. The total for the 18-week period ended May 1 is 179,575, as compared with 179,924 for the corresponding period last year. Infant deaths for the week in the same cities totaled 679, as compared with 659 last week and a 3-year median of 645. The cumulative figure is 12,417, as compared with 14,295 for the corresponding period last year.

Telegraphic morbidity reports from State health officers for the week ended May 1, 1948, and comparison with corresponding week of 1947 and 5-year median.

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 1, 1948	Apr. 26, 1947		May 1, 1948	Apr. 26, 1947		May 1, 1948	Apr. 26, 1947		May 1, 1948	Apr. 26, 1947	
NEW ENGLAND												
Maine	0	0	0	2	1	1	11	229	170	0	2	2
New Hampshire	0	0	0	-------	21	1	19	7	35	0	1	1
Vermont	0	0	0	-------	4	-------	9	280	109	0	0	0
Massachusetts	4	13	4	-------	-------	-------	1,503	332	1,017	0	5	6
Rhode Island	0	1	1	2	1	-------	4	294	10	0	0	1
Connecticut	2	0	0	5	12	1	92	932	481	0	0	2
MIDDLE ATLANTIC												
New York	9	15	15	[1] 1	[1] 5	[1] 3	2,910	629	1,836	2	11	19
New Jersey	1	0	4	1	10	8	1,387	404	1,505	1	3	6
Pennsylvania	16	23	16	[2]	[2]	[2] 2	2,060	250	956	7	1	13
EAST NORTH CENTRAL												
Ohio	9	6	6	1	14	14	1,112	657	657	2	7	9
Indiana	9	9	6	-------	6	3	597	119	198	2	2	5
Illinois	1	4	6	20	39	7	1,418	148	918	4	8	11
Michigan [3]	0	9	8	-------	4	1	1,483	128	1,078	5	9	9
Wisconsin	2	0	1	44	99	54	2,045	343	1,703	1	2	3
WEST NORTH CENTRAL												
Minnesota	3	6	4	-------	-------	-------	555	258	258	3	2	2
Iowa	1	1	2	-------	696	-------	289	225	225	1	2	2
Missouri	2	2	1	7	6	3	440	22	212	2	2	7
North Dakota	0	1	1	-------	4	1	17	16	16	0	0	0
South Dakota	0	0	1	-------	-------	-------	86	57	30	2	0	0
Nebraska	0	1	1	4	5	3	421	6	255	0	0	1
Kansas	3	8	3	-------	2	2	92	9	402	0	2	4
SOUTH ATLANTIC												
Delaware	0	0	0	-------	2	-------	65	2	15	0	0	0
Maryland [3]	1	12	14	1	16	4	406	35	327	0	1	4
District of Columbia	0	0	0	-------	-------	-------	115	32	132	1	3	3
Virginia	7	1	2	186	2,885	142	343	464	464	0	1	7
West Virginia	5	1	2	12	83	9	316	40	132	0	3	3
North Carolina	9	8	6	-------	-------	-------	19	116	321	0	2	4
South Carolina	5	5	5	319	914	267	103	216	216	0	0	2
Georgia	2	4	3	25	94	8	69	111	111	0	0	1
Florida	2	1	5	4	13	13	306	124	124	0	0	2
EAST SOUTH CENTRAL												
Kentucky	3	7	4	1	13	3	194	53	135	2	1	5
Tennessee	3	3	3	60	178	29	396	120	227	3	4	6
Alabama	6	2	7	33	445	45	88	305	143	0	4	8
Mississippi [3]	4	3	5	2	49	-------	46	15	-------	5	0	3
WEST SOUTH CENTRAL												
Arkansas	1	1	3	45	194	44	158	53	149	1	1	2
Louisiana	4	6	5	2	8	8	12	79	79	0	2	2
Oklahoma	3	2	3	21	347	32	73	4	42	2	0	1
Texas [3]	22	16	29	540	1,459	711	2,629	393	739	3	4	15
MOUNTAIN												
Montana	1	2	1	-------	78	15	14	96	96	0	1	1
Idaho	1	3	0	12	22	2	66	5	52	0	0	1
Wyoming	0	0	0	-------	-------	-------	138	21	43	1	0	0
Colorado	0	5	6	18	28	22	564	69	246	0	0	2
New Mexico	1	1	2	3	3	6	[3] 39	62	51	0	0	0
Arizona	0	3	3	32	193	85	556	122	122	1	0	0
Utah [3]	6	0	0	5	54	5	301	11	154	0	0	0
Nevada	0	0	0	-------	-------	-------	1	-------	2	0	0	0
PACIFIC												
Washington	3	2	2	3	15	-------	858	46	256	3	1	3
Oregon	4	1	2	16	40	20	147	25	163	1	0	1
California	9	13	22	6	25	25	3,854	219	1,360	4	5	16
Total	164	201	211	1,433	8,037	1,734	28,426	8,183	26,526	59	92	202
17 weeks	3,323	4,633	4,633	129,178	286,790	181,831	306,597	98,993	314,834	1,386	1,517	4,009
Seasonal low week [4]	(27th) July 5–11			(30th) July 26–Aug. 1			(35th) Aug. 30–Sept. 5			(37th) Sept. 13–19		
Total since low	9,681	12,199	13,337	172,736	319,765	319,765	341,543	121,880	352,847	2,168	2,489	6,461

[1] New York City only.
[2] Philadelphia only.
[3] Period ended earlier than Saturday.
[4] Dates between which the approximate low week ends. The specific date will vary from year to year.

Telegraphic morbidity reports from State health officers for the week ended May 1, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever [4]		
	Week ended—		Median 1943–47	Week ended		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 1, 1948	Apr. 26, 1947		May 1, 1948	Apr. 26, 1947		May 1, 1948	Apr. 26, 1947		May 1, 1948 [5]	Apr. 26, 1947	
NEW ENGLAND												
Maine	0	0	0	9	10	36	0	0	0	2	0	0
New Hampshire	0	0	0	3	8	8	0	0	0	0	0	0
Vermont	0	0	0	1	3	6	0	0	0	0	0	0
Massachusetts	0	0	0	185	106	315	0	0	0	2	4	4
Rhode Island	0	0	0	6	8	12	0	0	0	1	0	0
Connecticut	0	0	0	36	56	83	0	0	0	0	0	0
MIDDLE ATLANTIC												
New York	1	2	3	[6] 224	317	580	0	0	0	2	2	3
New Jersey	3	0	0	78	111	170	0	0	0	1	0	0
Pennsylvania	1	0	0	371	188	364	0	0	0	1	4	4
EAST NORTH CENTRAL												
Ohio	0	1	0	280	235	397	0	0	0	5	3	3
Indiana	0	0	0	15	104	104	0	0	1	1	5	2
Illinois	0	0	1	92	98	239	0	0	0	2	2	0
Michigan [3]	1	1	0	111	111	157	0	0	0	0	1	1
Wisconsin	0	0	0	70	77	178	0	0	0	0	1	1
WEST NORTH CENTRAL												
Minnesota	0	0	0	28	33	55	0	0	0	0	0	0
Iowa	5	0	0	20	34	45	0	0	0	0	1	0
Missouri	1	1	0	[6] 26	23	48	1	3	0	0	1	1
North Dakota	0	0	0	4	5	11	0	2	0	1	0	0
South Dakota	1	0	0	[6] 8	6	8	0	0	0	0	0	0
Nebraska	1	0	0	16	9	32	0	0	0	0	0	0
Kansas	0	0	0	29	38	53	1	1	0	0	0	0
SOUTH ATLANTIC												
Delaware	0	0	0	7	7	7	0	0	0	0	0	0
Maryland [3]	0	0	0	[6] 30	36	146	0	0	0	0	0	2
District of Columbia	0	0	0	9	9	23	0	0	0	1	0	0
Virginia	1	0	0	16	7	64	0	0	0	2	1	1
West Virginia	0	0	0	[6] 17	15	28	0	0	0	0	0	1
North Carolina	7	0	0	14	26	37	0	0	0	0	1	2
South Carolina	0	3	0	3	5	8	0	1	0	0	1	1
Georgia	[7] 1	0	0	9	8	12	0	0	0	6	3	3
Florida	3	5	4	0	9	9	0	0	0	3	2	2
EAST SOUTH CENTRAL												
Kentucky	0	0	0	14	29	49	0	1	0	2	2	1
Tennessee	0	0	0	26	32	32	0	0	0	0	0	2
Alabama	0	1	0	2	7	19	0	0	0	2	1	1
Mississippi [3]	1	0	0	4	8	7	1	0	0	2	0	1
WEST SOUTH CENTRAL												
Arkansas	0	0	0	2	4	11	0	0	0	2	2	2
Louisiana	0	2	1	1	6	10	0	0	1	6	3	3
Oklahoma	0	0	0	9	9	12	0	1	0	0	2	2
Texas	25	1	4	20	35	62	0	0	0	3	5	8
MOUNTAIN												
Montana	0	0	0	11	5	10	0	0	0	0	0	0
Idaho	0	0	0	[6] 13	1	37	0	1	0	1	0	0
Wyoming	0	0	0	0	1	13	0	0	0	0	0	0
Colorado	1	0	0	14	35	44	0	0	0	0	1	1
New Mexico	0	0	0	4	7	10	0	4	0	0	0	0
Arizona	0	0	0	4	10	11	0	0	0	0	1	0
Utah [3]	0	0	0	15	20	23	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	0	0	1	53	32	44	0	0	0	0	1	1
Oregon	0	0	0	15	23	28	0	0	0	0	2	0
California	3	11	7	86	114	170	0	0	0	4	5	5
Total	56	28	28	2,010	2,080	4,104	3	14	9	52	57	77
17 weeks	[7] 562	782	580	39,030	44,960	67,902	43	102	175	799	738	979
Seasonal low week [4]	(11th) Mar. 15–21			(32nd) Aug. 9–15			(35th) Aug. 30–Sept. 5			(11th) Mar. 15–21		
Total since low	[7] 214	170	170	61,509	71,646	106,223	64	156	258	326	253	371

[3] Period ended earlier than Saturday.
[4] Dates between which the approximate low week ends. The specific date will vary from year to year.
[5] Including paratyphoid fever reported separately, as follows: Maine 1, Massachusetts (salomonella infection) 1, Rhode Island 1, Virginia 1, California 1.
[6] Including cases reported as streptococcal sore throat.
[7] Correction (deducted from cumulative totals): Poliomyelitis, Georgia, week ended April 17, 1 case (instead of 2).

Telegraphic morbidity reports from State health officers for the week ended May 1, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Whooping cough			Week ended May 1, 1948							
	Week ended—		Median 1943–47	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever
	May 1, 1948	Apr. 26, 1947		Amebic	Bacillary	Unspecified					
NEW ENGLAND											
Maine	18	23	25								1
New Hampshire											1
Vermont	18	4	23								2
Massachusetts	27	111	122		3						1
Rhode Island	15	14	14								1
Connecticut	7	26	46								3
MIDDLE ATLANTIC											
New York	99	156	156	5	9		2				9
New Jersey	49	174	165								3
Pennsylvania	67	201	201								2
EAST NORTH CENTRAL											
Ohio	58	176	176								3
Indiana	3	71	40								2
Illinois	23	69	69	12	2		2				8
Michigan [3]	50	162	90	1			1				6
Wisconsin	58	193	104								
WEST NORTH CENTRAL											
Minnesota	20	14	18								8
Iowa	15	17	20								2
Missouri	29	21	19			1			1		1
North Dakota	2		1	4							
South Dakota	6		2								2
Nebraska	4	20	18		1		2				2
Kansas	68	31	31						1		1
SOUTH ATLANTIC											
Delaware	6	4	1								
Maryland [3]	13	72	65								
District of Columbia	11	11	7								
Virginia	38	124	62			58					2
West Virginia	14	32	29								1
North Carolina	54	77	159		1				2		
South Carolina	82	96	73	1	6					1	
Georgia	22	11	12		1				2	2	6
Florida	34	63	16	4	2	3			3	4	1
EAST SOUTH CENTRAL											
Kentucky	13	11	22								
Tennessee	38	23	26	2							
Alabama	32	120	22						3	4	2
Mississippi [3]	3	14								1	1
WEST SOUTH CENTRAL											
Arkansas	30	59	39	3	2				1		1
Louisiana	3	13	7	6							1
Oklahoma	20	6	6	6		1			2		2
Texas	499	644	391	25	373	32			1	1	12
MOUNTAIN											
Montana	5	7	5								1
Idaho	4	9	8								
Wyoming								2			
Colorado	32	14	25								5
New Mexico	46	19	17								
Arizona	27	56	19			35					
Utah [3]	17	13	33								1
Nevada											
PACIFIC											
Washington	65	29	33						1		
Oregon	24	13	14	7							1
California	112	299	299	10	16						1
Total	1,880	3,322	2,832	86	416	130	7	2	17	13	96
Same week, 1947	3,322			29	250	212	9	2	14	27	97
Median, 1943–47	2,832			35	323	107	11	7	11	45	[3] 97
17 weeks: 1948	36,738			1,174	4,757	3,097	144	13	308	234	1,547
1947	44,391			782	5,073	3,502	114	18	555	664	1,751
Median, 1943–47	42,080			510	4,939	1,739	142	18	285	782	[3] 1,466

[3] Period ended earlier than Saturday.
[3] 3-year median 1945–47.

Alaska, week ended Apr. 24: Influenza 4, mumps 2, pneumonia 3.
Territory of Hawaii, week ended May 1: Rabies 0, measles 4, scarlet fever 2, whooping cough 8.

WEEKLY REPORTS FROM CITIES*

City reports for week ended Apr. 24, 1948

This table lists the reports from 88 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

Division, State, and city	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	0	0	-----	1	-----	0	1	0	0	0	0	9
New Hampshire:												
Concord	0	0	-----	0	1	0	0	0	0	0	0	-----
Vermont:												
Barre	0	0	-----	0	-----	0	0	0	0	0	0	-----
Massachusetts:												
Boston	8	0	-----	0	311	2	12	0	97	0	3	4
Fall River	0	0	-----	0	10	0	1	0	0	0	0	3
Springfield	0	0	-----	0	4	0	0	0	4	0	0	-----
Worcester	0	0	-----	0	25	0	14	0	11	0	0	1
Rhode Island:												
Providence	0	0	-----	0	1	0	0	0	6	0	0	-----
Connecticut:												
Hartford	0	0	-----	0	-----	0	2	0	6	0	0	-----
New Haven	0	0	-----	0	3	0	0	0	5	0	0	4
MIDDLE ATLANTIC												
New York:												
Buffalo	0	0	-----	0	17	1	4	0	11	0	0	-----
New York	7	1	5	2	1,554	2	80	1	77	0	4	30
Rochester	0	0	-----	0	2	0	4	0	7	0	0	2
Syracuse	0	0	-----	0	3	0	2	0	7	0	0	5
New Jersey:												
Camden	1	0	-----	0	26	0	2	0	4	0	0	-----
Newark	0	0	-----	1	228	1	4	0	5	0	0	8
Trenton	0	0	-----	0	11	0	4	0	2	0	0	-----
Pennsylvania:												
Philadelphia	3	0	2	1	858	0	12	0	46	0	0	12
Pittsburgh	0	0	-----	0	6	1	7	0	57	0	0	5
Reading	0	0	-----	0	5	0	3	0	11	0	0	-----
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	1	0	-----	0	104	3	7	0	7	0	2	2
Cleveland	0	0	4	0	28	0	4	0	44	0	1	8
Columbus	0	0	-----	0	53	0	2	0	8	0	1	2
Indiana:												
Fort Wayne	0	0	-----	0	14	0	1	0	1	0	0	-----
Indianapolis	0	0	-----	0	224	0	1	0	8	0	0	1
South Bend	0	0	-----	0	10	0	0	0	0	0	0	1
Terre Haute	0	0	-----	0	-----	0	1	0	0	0	0	-----
Illinois:												
Chicago	0	0	2	2	722	0	21	0	37	0	0	22
Springfield	0	0	-----	0	7	0	8	0	8	0	0	-----
Michigan:												
Detroit	0	0	-----	0	626	2	3	1	65	0	0	4
Flint	0	0	-----	0	-----	0	3	0	1	0	0	-----
Grand Rapids	0	0	-----	0	21	0	1	0	4	0	0	2
Wisconsin:												
Kenosha	0	0	-----	0	78	0	0	0	0	0	0	-----
Milwaukee	0	0	-----	0	93	0	5	0	17	0	0	13
Racine	0	0	-----	0	48	0	0	0	1	0	0	1
Superior	0	0	-----	0	180	0	0	0	0	0	0	2
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0	-----	0	457	0	1	0	4	0	0	-----
Minneapolis	2	0	-----	0	34	1	3	0	8	0	0	-----
St. Paul	1	0	-----	0	44	1	1	0	0	0	2	7
Missouri:												
Kansas City	1	0	12	1	45	1	7	0	4	0	0	5
St. Joseph	0	0	-----	0	-----	0	0	0	0	0	0	-----
St. Louis	0	0	2	0	227	1	17	0	4	0	0	5

*In some instances the figures include nonresident cases.

City reports for week ended Apr. 24, 1948—Continued

Division, State, and city	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
Nebraska:												
Omaha	0	0	------	2	249	0	0	0	1	0	0	1
Kansas:												
Topeka	0	0	------	0	9	0	2	0	1	0	0	2
Wichita	0	0	------	0	2	0	3	0	1	0	0	3
SOUTH ATLANTIC												
Deleware:												
Wilmington	0	0	------	0	29	0	2	0	1	0	0	------
Maryland:												
Baltimore	3	0	2	0	113	0	5	0	5	0	0	3
Cumberland	0	0	------	0	------	0	0	0	4	0	0	------
Frederick	1	0	------	0	------	0	0	0	0	0	0	------
District of Columbia:												
Washington	0	0	------	0	152	1	6	0	8	0	0	------
Virginia:												
Richmond	0	0	------	0	6	0	0	0	1	0	0	3
Roanoke	0	0	------	0	------	0	0	0	1	0	0	------
West Virginia:												
Charleston	0	0	------	0	12	0	6	0	0	0	0	------
Wheeling	0	0	------	0	39	0	0	0	0	0	0	------
North Carolina:												
Raleigh	0	0	------	0	------	0	3	0	0	0	0	------
Wilmington	0	0	------	0	------	0	2	0	1	0	0	------
Winston-Salem	0	0	------	0	------	0	0	0	4	0	0	2
South Carolina:												
Charleston	1	0	1	0	1	0	0	0	0	0	0	12
Georgia:												
Atlanta	0	0	------	0	5	0	4	0	3	0	4	------
Brunswick	0	0	------	0	------	0	0	0	0	0	0	------
Savannah	0	0	------	0	------	0	0	0	0	0	0	1
Florida:												
Tampa	0	0	------	0	7	0	2	0	1	0	1	6
EAST SOUTH CENTRAL												
Tennessee:												
Memphis	0	0	------	0	88	1	4	0	0	0	0	3
Nashville	1	0	------	0	1	0	2	0	0	0	0	5
Alabama:												
Birmingham	6	0	------	0	4	0	2	0	3	0	0	7
Mobile	0	0	------	0	------	0	3	0	0	0	1	------
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock	0	0	------	0	3	0	0	0	1	0	0	2
Louisiana:												
New Orleans	0	0	7	2	4	0	6	0	1	0	2	2
Shreveport	0	0	------	0	------	0	3	0	0	0	0	------
Oklahoma:												
Oklahoma City	0	0	------	0	11	0	3	0	3	0	0	1
Texas:												
Dallas	0	0	------	0	178	0	0	0	5	0	0	2
Galveston	0	0	------	0	3	0	1	0	0	0	0	------
Houston	0	0	3	0	------	0	5	0	3	0	0	2
San Antonio	1	0	------	0	22	0	8	1	0	0	0	------
MOUNTAIN												
Montana:												
Billings	0	0	------	0	2	0	5	0	0	0	0	------
Great Falls	0	0	------	0	------	0	0	0	0	0	0	------
Helena	0	0	------	0	------	0	0	0	1	0	0	------
Missoula	1	0	------	0	------	0	0	0	0	0	0	4
Idaho:												
Boise	0	0	------	0	------	0	2	0	0	0	0	------
Colorado:												
Denver	0	0	1	0	297	2	6	0	4	0	0	15
Pueblo	0	0	------	0	10	0	2	0	2	0	0	6
Utah:												
Salt Lake City	0	0	------	0	75	0	2	0	2	0	0	------

City reports for week ended Apr. 24, 1948—Continued

Division, State, and city	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	2	0	------	0	72	0	5	0	8	0	0	3
Spokane	0	0	------	0	9	0	2	0	8	0	0	------
Tacoma	1	0	------	0	23	0	0	0	2	0	0	1
California:												
Los Angeles	2	0	4	0	261	0	7	0	12	0	0	8
Sacramento	0	0	------	0	------	0	1	0	2	0	0	13
San Francisco	1	0	1	0	285	1	4	1	14	0	1	2
Total	44	1	46	12	8,052	21	346	4	680	0	22	267
Corresponding week, 1947 [1]	56	------	165	35	1,981	------	404	------	568	1	8	736
Average 1943–47 [1]	68	------	121	[2] 25	[3] 6,676	------	[2] 360	------	1,467	1	12	650

[1] Exclusive of Oklahoma City. [2] 3-year average 1945–47. [3] 5-year median 1943–47.

Rates (annual basis) per 100,000 population, by geographic groups, for the 88 cities in the preceding table (latest available estimated population, 34,410,800)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	22.6	0.0	0.0	2.8	1,004	5.7	84.9	0.0	365	0.0	8.5	59
Middle Atlantic	5.1	0.5	3.2	1.9	1,254	2.3	56.5	0.5	105	0.0	1.9	29
East North Central	0.6	0.0	3.6	1.2	1,343	3.0	34.7	0.6	122	0.0	2.4	35
West North Central	8.0	0.0	28.2	6.0	2,146	8.0	68.4	0.0	46	0.0	4.0	46
South Atlantic	8.3	0.0	5.0	0.0	602	1.7	49.6	0.0	48	0.0	8.3	45
East South Central	41.3	0.0	0.0	0.0	549	5.9	64.9	0.0	18	0.0	5.9	89
West South Central	2.5	0.0	25.4	5.1	561	0.0	66.0	2.5	33	0.0	5.1	23
Mountain	7.9	0.0	7.9	0.0	3,050	15.9	135.0	0.0	71	0.0	0.0	199
Pacific	9.5	0.0	7.9	0.0	1,028	1.6	30.0	1.6	73	0.0	1.6	43
Total	6.7	0.2	7.0	1.8	1,223	3.2	52.6	0.6	103	0.0	3.3	41

Dysentery, amebic.—Cases: New York 14; New Orleans 5; Los Angeles 3; San Francisco 1.
Dysentery, bacillary.—Cases: Worcester 1; Winston-Salem 1; Los Angeles 1.
Leprosy.—Cases: Los Angeles 1.

TERRITORIES AND POSSESSIONS

Virgin Islands of the United States

Notifiable diseases—January–March 1948.—During the months of January, February, and March, 1948, cases of certain notifiable diseases were reported in the Virgin Islands of the United States as follows:

Disease	January	February	March	Disease	January	February	March
Chickenpox	------	------	10	Mumps	16	12	25
Dysentery, unspecified	2	------	------	Pneumonia	4	------	1
Filariasis	4	------	3	Syphilis	7	9	7
Gonorrhea	12	8	6	Tuberculosis, pulmonary	1	1	------
Hookworm disease	1	5	6	Typhoid fever	2	------	------
Measles	2	------	8				

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended April 10, 1948.—During the week ended April 10, 1948, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		37		289	232	75	11	22	82	748
Diphtheria	1			21	1	1		5		29
Encephalitis, infectious					1					1
German measles		3		27	14	1		2	10	57
Influenza		17			44	3			70	134
Measles				855	1,149	6	7	32	72	2,121
Meningitis, meningococcus		1		2		1				4
Mumps		9		302	295	77	71	25	7	786
Poliomyelitis						1				1
Scarlet fever	2	1	1	42	86	5	1	5	5	148
Tuberculosis (all forms)		8	3	127	38	15	3	37	100	331
Typhoid and paratyphoid fever	2			2			1			5
Undulant fever				3	1			1	3	8
Venereal diseases:										
Gonorrhea	1	14	11	112	73	21	23	38	72	365
Syphilis	1	12	6	50	51	12	6	7	23	168
Whooping cough				48	17	16	5	23	4	113

CUBA

Habana—Communicable diseases—5 weeks ended April 3, 1948.—During the 5 weeks ended April 3, 1948, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chickenpox	14		Poliomyelitis	1	
Diphtheria	37		Tuberculosis	4	5
Malaria	5		Typhoid fever	18	
Measles	29	1			

Provinces—Notifiable diseases—5 weeks ended April 3, 1948.—During the 5 weeks ended April 3, 1948, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana [1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	8	14	7	26		23	78
Chickenpox		14	11	1	4	11	41
Diphtheria		44		1		3	48
Hookworm disease		20					20
Leprosy	1	3				2	6
Malaria	6	6	1		3	1	17
Measles	4	28	2	9		6	49
Poliomyelitis		1		1			2
Tuberculosis	26	19	14	14	5	22	100
Typhoid fever	18	27	3	23	6	33	110
Typhus fever (murine)			1				1
Whooping cough		53			2		55

[1] Includes the city of Habana.

FINLAND

Notifiable diseases—February 1948.—During the month of February 1948, cases of certain notifiable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	12	Poliomyelitis	7
Diphtheria	203	Scarlet fever	303
Gonorrhea	870	Syphilis	300
Malaria	2	Typhoid fever	36
Paratyphoid fever	159		

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

India—Calcutta.—For the week ended April 24, 1948, 435 cases of cholera were reported in Calcutta, India.

Indochina (French)—Cochinchina—Saigon.—Cholera has been reported in Saigon, Cochinchina, French Indochina, as follows: For the week ended April 17, 1948, 12 cases; for the week ended April 24, 1948, 12 cases.

Pakistan—West Punjab Province—Lahore District.—Information dated April 30, 1948, states that an outbreak of cholera has been reported in Lahore District, West Punjab Province, India. During the month of April 1948, 1,355 cases with 229 deaths were reported in this area. The outbreak was stated to be confined to refugee camps, with a few stray cases reported in the city of Lahore. Cases have been reported in Lahore City as follows: Week ended April 17, 6 cases; week ended April 24, 10 cases.

Plague

Venezuela—Aragua State—Tejerias.—For the week ended May 1, 1948, 3 fatal cases of plague were reported in Tejerias, Aragua State, Venezuela.

Smallpox

China—Shanghai.—For the week ended April 24, 1948, 69 cases of smallpox were reported in Shanghai, China.

Colombia.—For the period March 1–31, 1948, 879 cases of smallpox with 11 deaths were reported in Colombia.

India—Calcutta.—For the week ended April 24, 1948, 129 cases of smallpox were reported in Calcutta, India.

Indochina (French)—Cochinchina—Saigon.—For the week ended April 24, 1948, 19 cases of smallpox were reported in Saigon, Cochinchina, French Indochina.

Typhus fever

Colombia.—During the month of March 1948, 264 cases of typhus fever with 5 deaths were reported in Colombia.

DEATHS DURING WEEK ENDED APR. 24, 1948

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended Apr. 24, 1948	Corresponding week, 1947
Data for 93 large cities of the United States:		
Total deaths	9,210	9,434
Median for 3 prior years	9,434	
Total deaths, first 17 weeks of year	170,531	170,947
Deaths under 1 year of age	659	733
Median for 3 prior years	631	
Deaths under 1 year of age, first 17 weeks of year	11,738	13,548
Data from industrial insurance companies:		
Policies in force	71,079,535	67,304,615
Number of death claims	13,134	14,060
Death claims per 1,000 policies in force, annual rate	9.7	10.9
Death claims per 1,000 policies, first 17 weeks of year, annual rate	10.2	10.0

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It contains (1) current information regarding the incidence and geographic distribution of communicable diseases in the United States, insofar as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other important communicable diseases throughout the world; (2) articles relating to the cause, prevention, and control of disease; (3) other pertinent information regarding sanitation and the conservation of the public health.

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